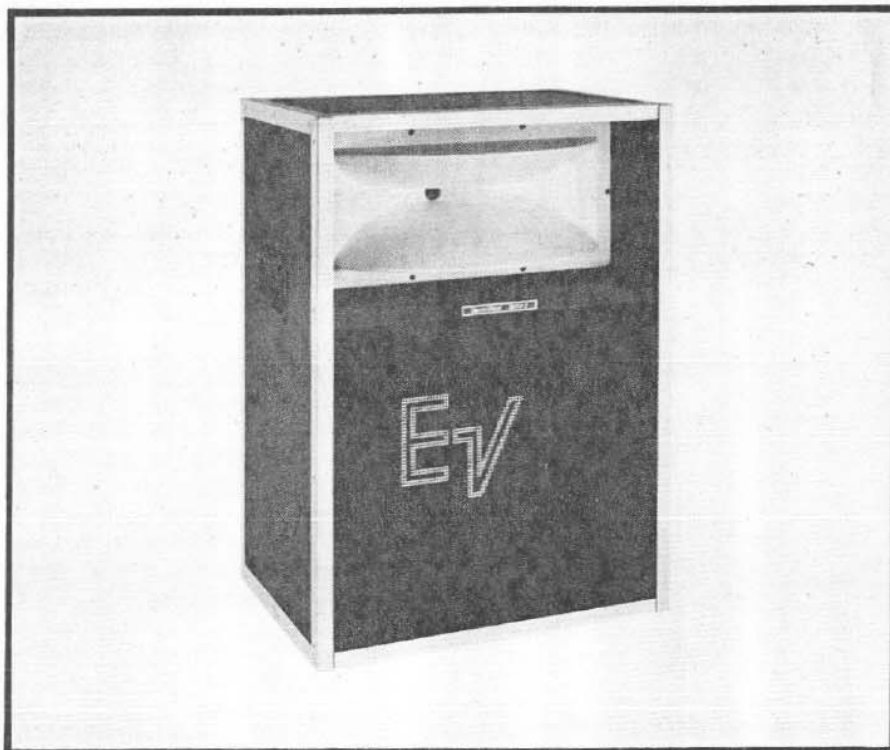




Electro-Voice®
a gulton company

Model SH15-2 Horn Loaded Stage Speaker System

SPECIFICATIONS

Usable Frequency Response:

60 Hz to 15 kHz

Sound Pressure Level:

1 meter at 100 watts input*

120 dB

1 meter at 1 watt input*

100 dB

Long Term Average Power Handling Capacity:*

100 watts

Nominal Impedance:

8 ohms

Minimum Impedance:

6.2 ohms

Crossover Frequency:

1500 Hz

Average Horizontal Beamwidth:

2 kHz — 16 kHz

90°

Average Vertical Beamwidth:

2 kHz — 16 kHz

45°

Connections:

Parallel 1/4 in. phone jacks (allows paralleling of multiple speakers)

Finish:

Black vinyl with aluminum trim

Dimensions:

75.5 cm (29.7 in.) high

38.1 cm (15.0 in.) deep

54.3 cm (21.4 in.) wide

Weight:

38.1 kg (84 lbs)

Optional Accessories:

Model 480A stand

*See POWER HANDLING CAPACITY for input spectrum.

DESCRIPTION

The Electro-Voice Model SH15-2 is a two-way, all-horn stage speaker system, designed for applications that require a full-range high-output system. These applications include: portable sound reinforcement (PA) systems, on-stage vocal monitoring, and reinforcement of various electronic keyboards and synthesizers.

The SH15-2 is capable of producing high sound pressure levels with 120 dB being generated at one meter with 100 watts input.

The high-frequency section features an Electro-Voice DH1202 compression driver coupled to an Electro-Voice HR series, constant directivity horn. Electro-Voice HR constant directivity horns are the first patented improvements in horn design since the pioneering work of the 30's (U.S. Patent Number 701112). Unlike conventional radial horns that exhibit beamwidth narrowing, constant directivity horns maintain rated beamwidth to the highest frequencies. This allows each person in the coverage pattern to enjoy the same sound quality that is heard directly on axis. Addition Number 6 of the E-V "PA Bible" ("The Constant Directivity Horn White Paper") covers the constant directivity concept in greater detail. To obtain a copy, see the "PA Bible" section of this Engineering Data Sheet.

The low-frequency section consists of an Electro-Voice 15 inch woofer in a vented horn enclosure. A vented horn combines the wide bandwidth and low distortion associated with vented boxes, with the high efficiency of a horn-loaded system.

Construction of the SH15-2 cabinet consists of high-density, black vinyl covered 3/4" particle board with carrying handles, heavy duty rubber feet, and protective aluminum trim. The rugged construction and relatively small size and light weight make the SH15-2 ready for the road.

FREQUENCY RESPONSE

The SH15-2 frequency response was measured in an anechoic (echoless) environment at ten feet on axis with four volts of swept 1/3-octave pink noise. The plot of the SH15-2 frequency response is shown in Figure 2.

DISPERSION

The polar-versus-frequency curves for SH15-2 are shown in Figure 4. This data was taken using octave bands of pink noise. With the speaker system's long axis vertical, both the horizontal (side-to-side) and vertical (up-and-down) polar responses are shown. The measuring microphone was ten feet from the speaker system. From this data, the 6-dB-down points were obtained and beamwidth-versus-frequency plots were made. This information is shown in Figure 3.

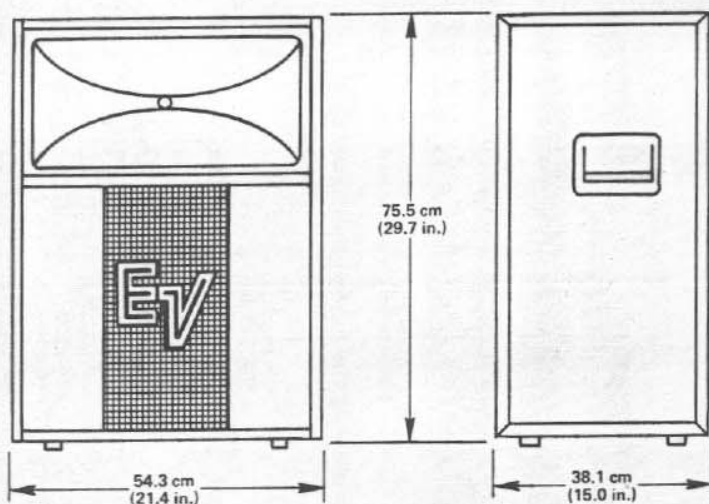


FIGURE 1 — Dimensions

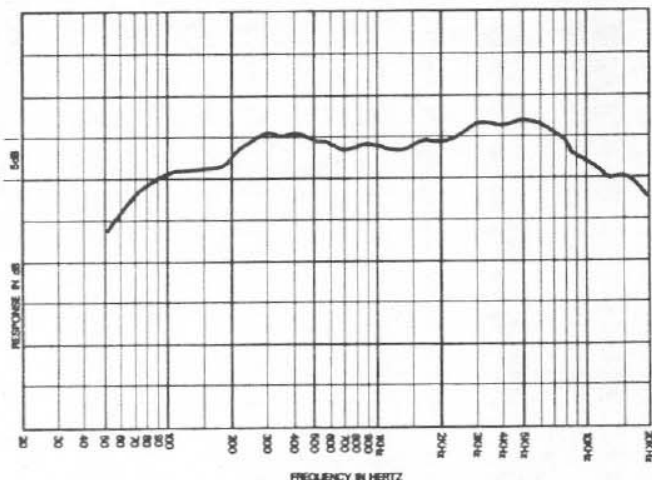


FIGURE 2 — SH15-2 Frequency Response
(Swept 1/3-Octave Band Pink Noise)

POWER HANDLING TEST

To our knowledge, Electro-Voice was the first U.S. manufacturer to develop and publish a power test closely related to real-life conditions. First, we use a random noise input signal because it contains many frequencies simultaneously, just like real voice or instrument program. Second, our signal contains more energy at extremely high and low frequencies than typical actual program, adding an extra measure of reliability. Third, the test signal includes not only the overall "long-term average" or "continuous" level — which our ears interpret as loudness — but also short-duration peaks which are many times higher than the average, just like actual program. The long-term average level stresses the speaker thermally (heat). The instantaneous peaks test mechanical reliability (cone and diaphragm excursion). Note that the sine wave test signals sometimes used have a much less demanding peak value relative to their average level. In actual use, long-term average levels exist from several seconds on up, but we apply the long-term average for several hours, adding another extra measure of reliability.

The SH15-2 has been specifically tested for 24 hours as follows. The output of a pink noise generator is fed to a shaping filter where the frequency spectrum is rolled off at 6 dB per octave beginning at 100 Hz and 10,000 Hz. (Pink noise is a particular type of random noise with equal power in every octave.) This shaped signal is sent to the power amplifier with the long-term average power set at 100 watts into 8 ohms (28.3 volts true RMS). Amplifier clipping sets instantaneous peaks at about 6 dB above the average, or 400 watts (55 volts peak). This procedure provides a rigorous test of both thermal and mechanical failure modes.

MOUNTING SPEAKERS ON STAND

The bottom of the SH15-2 contains two 1/4-20 T-nuts for mounting the speaker on a stand. The T-nuts are spaced three inches apart to fit the E-V Model 480A or the Atlas CS100 stands. (Overall height of the E-V 480A stand is 58 inches and the Atlas CS100 stand is 46 inches.) The mounting bracket should be attached with the collar facing the front of the speaker system.

FIELD REPLACEMENT

In case of accidental damage to the DH1202 high-frequency driver, the diaphragm subassembly can be field replaced. A replacement kit with instructions may be ordered under Electro-Voice Part Number 89588-XX from the Electro-Voice Service Department in Buchanan, Michigan, or Visalia, California. If desired, the complete driver may be returned for service (see Warranty section).

THE E-V "PA BIBLE"

The "PA Bible" is a practical, complete guide to solving the sound reinforcement problems faced by professional musicians. For the first time, the important fundamentals of high-performance sound system design and application are outlined and made useful to the performer. If you work with loudspeakers and microphones, you should have the E-V "PA Bible."

A number of additions to the basic "Bible," each covering a separate topic of interest, have been produced. If you would like a copy of the "PA Bible," all existing and future additions, send your name and address with Two Dollars (\$2.00) to:

E-V "PA Bible"
Electro-Voice, Inc.
P. O. Box 186
Buchanan, Michigan 49107

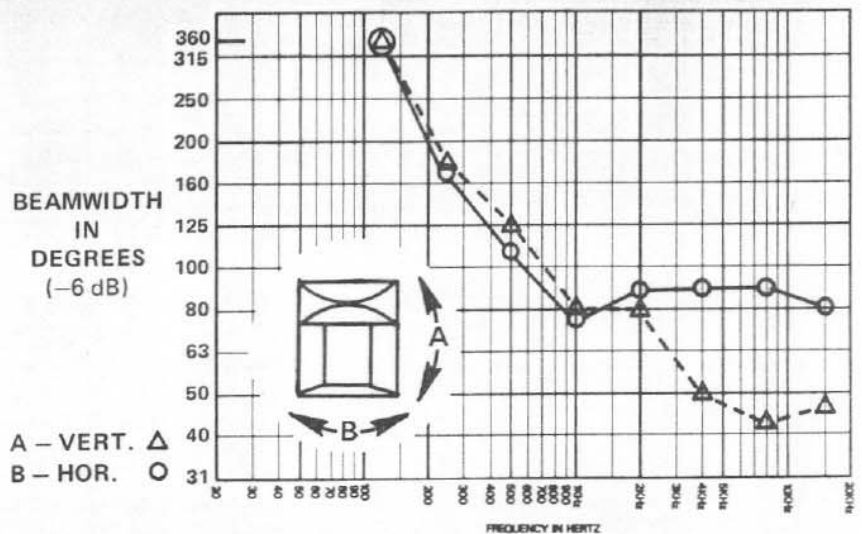


FIGURE 3 - SH15-2 Beamwidth vs. Frequency
(System Long Axis Vertical)

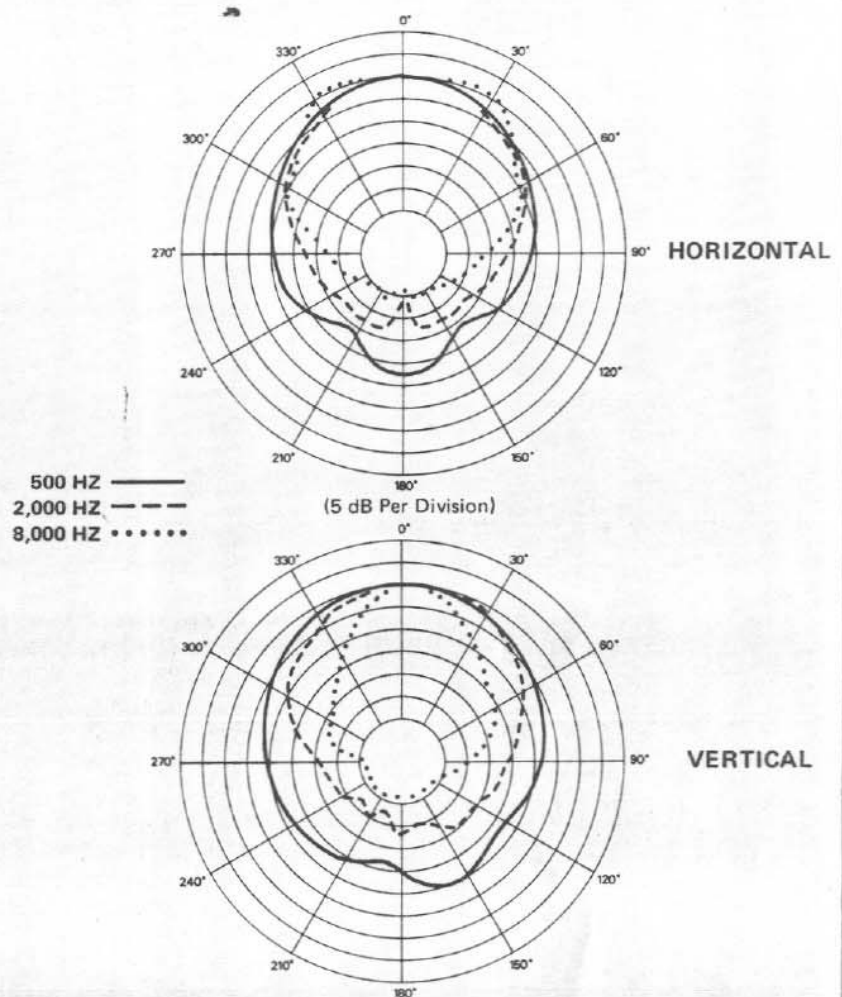


FIGURE 4 - SH15-2 Polar Response
Octave Bands of Pink Noise, System Long Axis is Vertical